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Observations of the Planet Iris and Comparison Stars, made with the Transit Circle of the Radcliffe Observatory, Oxford, during the Opposition of 1888.

(*Communicated by E. J. Stone, M.A., F.R.S., Radcliffe Observer.*)

Observations of the Planet Iris.

[The N.P.D.'s are corrected for Refraction but not for Parallax.]

Greenwich Mean Time of Observation.				Observer.	Apparent Places.						Observer's Remarks.
					R.A.			N.P.D.			
1888.	h	m	s		h	m	s	°	′	″	
Oct. 15	12	54	13	R.	2	29	5·35	66	15	17·78	
17	12	45	3	R.	2	27	46·22	66	25	19·46	Faint at times; cloudy.
19	12	35	47	R.	2	26	22·16	66	36	23·76	Very diffused.
20	12	31	8	F. B.	2	25	38·46	66	42	19·07	Bad image.
22	12	21	46	R.	2	24	8·30	66	54	57·88	Diffused and unsteady; foggy.
23	12	17	4	F. B.	2	23	22·06	67	1	38·88	Diffused and faint; foggy.
30	11	43	58	F. B.	2	17	46·35	67	54	31·03	Magnitude 7–6.
Nov. 13	10	38	44	F. B.	2	7	33·21	69	59	4·47	Magnitude 7 or 7–6.
16	10	25	16	F. B.	2	5	53·22	70	26	6·87	Magnitude 7 or 7–8. Diffused.
17	10	20	50	R.	2	5	23·28	70	34	59·66	Very faint; doubtful observation in N.P.D. Cloudy.
21	10	3	26	R.	2	3	42·12	71	9	28·81	
22	9	59	9	F. B.	2	3	21·61	71	17	48·35	Magnitude 7 or 7–8.
26	9	42	25	R.	2	2	20·48	71	49	29·81	Magnitude 7–8.
27	9	38	19	F. B.	2	2	10·56	71	56	59·07	Magnitude 7–8.
30	9	26	14	R.	2	1	53·42	72	18	21·92	Very faint; observation of little value; cloudy.
Dec. 1	9	22	17	F. B.	2	1	52·35	72	25	3·66	About ½ Mag. fainter than Arg. Z. + 17°, 315.
6	9	3	6	F. B.	2	2	20·39	72	55	16·15	Very faint; thick haze.
12	8	41	17	R.	2	4	7·19	73	23	52·92	

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Observations of the Comparison Stars Observed with Iris.

Separate Results.

Day.	Observer.	Obs. Mag.	Mean R.A. 1888 Jan. 1.			Mean N.P.D. 1888 Jan. 1.			Notes.
			h	m	s	°	′	″	
Arg. Z. + 17°, 307.									
1888. Nov. 16	F. B.	6	1	57	34·03	72	17	7·27	Red star.
22	F. B.	6			34·00			7·70	Reddish.
27	F. B.	6			33·95			5·97	
		6	1	57	33·98	72	17	6·98	
Arg. Z. + 17°, 315.									
Nov. 30	R.		2	1	36·95	72	30	15·45	
Dec. 1	F. B.				...			15·12	
22	F. B.	8			37·02			15·42	
		8	2	1	36·99	72	30	15·33	
Arg. Z. + 16°, 247.									
Dec. 6	F. B.				...	73	18	2·66	
12	R.		2	3	14·07			3 60	
18	R.				14·02			4·03	
26	F. B.	7–6			13·83			4·85	
		7–6	2	3	13·97	73	18	3·79	
Arg. Z. + 19°, 329.									
Nov. 16	F. B.	7½			...	70	10	57·08	Double; 7½ and 9½ or 10–9 Magnitudes.
17	R.				...			57·99	
1889. Jan. 1	R.		2	3	29·95			...	
		7–8	2	3	29·95	70	10	57·54	
Arg. Z. + 18°, 277.									
1888. Nov. 21	R.		2	4	25·14	71	1	42·39	
22	F. B.	6–7			25·01			42·83	
		6–7	2	4	25·08	71	1	42·61	
Arg. Z. + 20°, 341.									
Nov. 13	F. B.		2	5	6·07	69	9	1·59	

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Day.	Observer.	Obs. Mag.	Mean R.A. 1888 Jan. 1.	Mean N.P.D. 1888 Jan. 1.	Notes.
			Arg. Z. + 21°, 298.		
1889.			h m s	° ′ ″	
Jan. 1	R.		2 6 2·98	68 32 33·73	
			Arg. Z. + 20°, 348 (η *Arietis*).		
1888.					
Nov. 27	F. B.	6–5	2 6 31·92	69 18 54·83	
Dec. 6	F. B.		31·90	54·44	
28	R.		31·84	56·11	
		6–5	2 6 31·89	69 18 55·13	
			Arg. Z. + 21°, 317.		
Dec. 12	R.		2 11 26·14	67 51 25·61	Estimation of Mag. Dec. 22 = 9–8.
18	R.		26·20	26·93	
		9–8	2 11 26·17	67 51 26·27	
			Arg. Z. + 19°, 340 (θ *Arietis*).		
Oct. 23	F. B.		2 11 53·70	70 37 1·77	
Nov. 13	F. B.	5–6	53·74	2·92	
20	F. B.	5½	53·78	1·26	
22	F. B.	5½	53·92	2·43	3 wires only in R.A. "Good."
Dec. 6	F. B.		53·77	1·59	
7	R.		53·74	2·52	
		5–6	2 11 53·77	70 37 2·08	
			Arg. Z. + 21°, 321.		
Dec. 22	F. B.	8	2 12 16·77	68 37 10·03	A star follows (Arg. Z. + 21, 322) 9 or 9–8 Mag.
26	F. B.	8–7	16·83	10·10	
		8	2 12 16·80	68 37 10·07	
			Arg. Z. + 22°, 329.		
1889.					
Jan. 1	R.		2 12 38·61	67 20 57·78	
			Arg. Z. + 19°, 346.		
1888.					
Nov. 16	F. B.	9	2 14 17·95	70 23 25·28	Very faint.
27	F. B.	9	17·97	23·11	Very faint.
		9	2 14 17·96	70 23 24·20	

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Day.	Observer.	Obs. Mag.	Mean R.A. 1888 Jan. 1.	Mean N.P.D. 1888 Jan. 1.	Notes.
			Arg. Z. + 22°, 331.		
			h m s	° ′ ″	
1888. Oct. 19	R.		2 14 53·90	67 5 11·00	
30	F. B.	7–8	53·90	11·14	
Nov. 21	R.		53·98	11·69	
		7–8	2 14 53·93	67 5 11·28	
			Arg. Z. + 20°, 388.		
Dec. 12	R.	9–8	2 17 30·03	69 5 40·63	
			Arg. Z. + 22°, 347.		
Nov. 22	F. B.	8–7	2 20 37·91	67 37 33·19	
Dec. 22	F. B.	8–7	37·99	32·31	
		8–7	2 20 37·95	67 37 32·75	
			Arg. Z. + 23°, 326.		
Oct. 20	F. B.		...	65 52 13·48	
1889. Jan. 1	R.		2 21 53·45	15·21	
			2 21 53·45	65 52 14·35	
			Arg. Z. + 22°, 354.		
1888. Oct. 22	R.		2 22 50·55	67 1 51·32	
23	F. B.		50·61	52·03	
Nov. 27	F. B.	6	50·58	52·40	
30	R.		50·63	53·60	
		6	2 22 50·59	67 1 52·45	
			Arg. Z. + 20°, 404.		
Oct. 30	F. B.	8–7	2 22 57·71	68 54 21·90	
Dec. 26	F. B.	8	57·59	21·02	
		8	2 22 57·65	68 54 21·46	
			Arg. Z. + 24°, 358.		
Oct. 15	R.		2 24 5·75	65 15 41·99	Estimation of Mag. Dec. 22 = 6–5.
17	R.		...	42·53	
19	R.		5·83	42·70	
1889. Jan. 7	W.		5·82	42·34	
		6–5	2 24 5·80	65 15 42·39	

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Day.	Observer.	Obs. Mag.	Mean R.A. 1888 Jan. 1.	Mean N.P.D. 1888 Jan. 1.	Notes.
			Arg. Z. + 21°, 349.		
1888.			h m s	° ′ ″	
Nov. 13	F. B.	7½	2 26 1·78	68 9 43·39	
20	F. B.	8–7	1·78	41·27	
22	F. B.	7½	1·75	42·91	
		8–7	2 26 1·77	68 9 42·52	
			Arg. Z. + 24°, 369.		
Nov. 26	R.	8	2 28 11·79	65 35 55·67	
Dec. 12	R.	8	11·81	54·71	
13	F. B.		...	55·07	
26	F. B.	8–9	11·89	54·21	
		8	2 28 11·83	65 35 54·92	
			Arg. Z. + 22°, 368.		
Oct. 20	F. B.		2 28 16·68	67 31 24·62	
Nov. 27	F. B.	8–9	16·65	22·02	
Dec. 22	F. B.	9–8	16·59	24·21	
		9–8	2 28 16·64	67 31 23·62	
			Arg. Z. + 22°, 372.		
Oct. 17	R.		...	67 26 10·86	
19	R.		2 30 18·74	10·41	
Nov. 22	F. B.	8	18·67	11·08	
		8	2 30 18·70	67 26 10·78	
			Arg. Z. + 24°, 376.		
1889. Jan. 1	R.		2 30 33·05	65 50 26·13	Second and brighter of two stars observed.
			Arg. Z. + 22°, 375.		
1888. Nov. 13	F. B.	8–9	2 31 25·36	67 21 25·99	
20	F. B.	8–9	25·39	24·59	
		8–9	2 31 25·38	67 21 25·29	

H H

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Mean Places of Iris Comparison Stars.

Star's Name.	Mag.	Mean R.A. 1888, Jan. 1.	No. of Obs. in R.A.	Mean N.P.D. 1888, Jan. 1.	No. of Obs. in N.P.D.
		h m s		° ′ ″	
Arg. Z. +17°307	7·0	1 57 33·98	3	72 17 6·98	3
+17·315	7·3	2 1 36·99	2	72 30 15·33	3
+16·247	6·8	2 3 13·97	3	73 18 3·79	4
+19·329	7·5	2 3 29·95	1	70 10 57·54	2
+18·277	6·0	2 4 25·08	2	71 1 42·61	2
+20·341	7·5	2 5 6·07	1	69 9 1·59	1
+21·298	8·5	2 6 2·98	1	68 32 33·73	1
+20·348	5·5	2 6 31·89	3	69 18 55·13	3
+21·317	8·3	2 11 26·17	2	67 51 26·27	2
+19·340	6·0	2 11 53·77	6	70 37 2·08	6
+21·321	8·0	2 12 16·80	2	68 37 10·07	2
+22·329	6·0	2 12 38·61	1	67 20 57·78	1
+19·346	8·5	2 14 17·96	2	70 23 24·20	2
+22·331	7·8	2 14 53·93	3	67 5 11·28	3
+20·388	8·5	2 17 30·03	1	69 5 40·63	1
+22·347	7·8	2 20 37·95	2	67 37 32·75	2
+23·326	8·6	2 21 53·45	1	65 52 14·35	2
+22·354	6·0	2 22 50·59	4	67 1 52·45	4
+20·404	7·5	2 22 57·65	2	68 54 21·46	2
+24·358	6·2	2 24 5·80	3	65 15 42·39	4
+21·349	8·0	2 26 1·77	3	68 9 42·52	3
+24·369	8·2	2 28 11·83	3	65 35 54·92	4
+22·368	8·1	2 28 16·64	3	67 31 23·62	3
+22·372	7·6	2 30 18·70	2	67 26 10·78	3
+24·376	7·0	2 30 33·05	1	65 50 26·13	1
+22·375	8·3	2 31 25·38	2	67 21 25·29	2

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Radcliffe Observatory, Oxford:
1889, *May* 9.

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Ephemeris for Physical Observations of the Moon. By A. Marth.
1889 *July* 1 *to* 1890 *January* 1.

(Continued from p. 140.)

Greenwich Noon.	Selenographical Colong. of the Sun.	Selenographical Lat. of the Sun.	Sel. Long. of the Earth.	Lat. of the Earth.	Geocentric Libration, Amount.	Direction.
1889.						
July 1	309°·27	−0°·08	−4°·93	−3°·61	6°·11	126°·3
2	321·52	0·05	5·92	4·77	7·59	129·0
3	333·76	−0·03	6·68	5·71	8·78	130·7
4	345·99	+0·00	7·17	6·39	9·59	131·9
5	358·22	+0·03	7·34	6·77	9·97	132·9
6	10·45	0·05	7·14	6·80	9·85	133·8
7	22·66	+0·08	−6·57	−6·45	9·19	134·7
8	34·87	0·11	5·60	5·70	7·99	135·7
9	47·07	0·14	4·28	4·58	6·27	137·0
10	59·27	0·17	2·67	3·13	4·11	139·6
11	71·47	0·20	−0·86	−1·45	1·68	149·4
12	83·66	0·23	+1·04	+0·35	1·09	288·6
13	95·85	0·26	2·87	2·11	3·56	306·4
14	108·04	+0·29	+4·52	+3·71	5·84	309·5
15	120·23	0·32	5·85	5·03	7·71	310·8
16	132·43	0·35	6·81	6·00	9·06	311·6
17	144·63	0·38	7·33	6·59	9·84	312·2
18	156·84	0·41	7·41	6·81	10·05	312·8
19	169·06	0·43	7·09	6·68	9·73	313·5
20	181·28	0·46	6·40	6·24	8·93	314·4
21	193·51	+0·48	+5·43	+5·52	7·74	315·6
22	205·74	0·50	4·24	4·57	6·23	317·2
23	217·98	0·53	2·90	3·44	4·49	319·9
24	230·22	0·55	1·49	2·15	2·62	325·4
25	242·46	0·57	+0·07	+0·79	0·79	354·8
26	254·71	0·59	−1·29	−0·62	1·44	115·7
27	256·96	0·61	2·56	2·01	3·25	128·2